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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,543	07/28/2006	Joerg Habetha	US040121	2516

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EXAMINER
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AJIBADE AKONAI, OLUMIDE

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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02/01/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,543	<b>Applicant(s)</b> HABETHA ET AL.	
	<b>Examiner</b> OLUMIDE T. AJIBADE AKONAI	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,9,11,12,14,15,19,22,27,28,33,35 and 37 is/are rejected.
- 7) ☒ Claim(s) 2,6,8,10,13,16-18,20,21,23-26,29-32 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In view of the appeal brief on November 8, 2010 filed, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Charles N. Appiah/  
Supervisory Patent Examiner, Art Unit 2617

### ***Claim Objections***

2. Claims 26, 30, and 31 are objected to because of the following informalities:

Insert “**information element**” between “**reservation**” and “**IE**”. Appropriate correction is required.

***Allowable Subject Matter***

3. Claims 2, 6, 8, 10, 13, 16-18, 20, 21, 23-26, 29-32 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The indicated allowability of claims 22, 35 and 37 is withdrawn in view of a 35 USC 112, second paragraph rejection.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 22, 35 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites the limitation "a device" in line 1. There is insufficient antecedent basis for this limitation in the claim (i.e., it is not clear if the device is the sender device of claim 21, or a receiver device).

Claims 35 and 37 recites the limitation "the medium" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

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granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3-5, 7, 9, 11, 12, 14, 15, 19, 27, 28 and 33 are rejected under 35

U.S.C. 102(e) as being anticipated by **Kondylis et al 6,665,311 (hereinafter**

**Kondylis)**.

Regarding **claim 1**, Kondylis discloses a method of decentralized medium access control in a communications network (TDMA-based distributed reservation protocol in a mobile ad hoc network, see col. 15, lines 26-28) including a plurality of devices (neighboring nodes X and Y, see col. 17, lines 21-29 and 61-66), comprising the steps of: dividing time into a sequence of at least one superframe (frame 900, see fig. 9, col. 16, lines 60-63); and a first device of said plurality of devices (Node X, see col. 17, lines 29-33) transmitting in the superframe at a target beacon transmission time (TBTT) (Node X transmitting at the beginning of the reservation slots 902 in the frame 900, see figs. 9 and 10, col. 16, line 62 – col. 17, line 5) a beacon frame that includes a reservation for a planned transmission by a sender device (Node X, see col. 17, lines 21-29 and 61-66), during the superframe (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to be reserved for the node X for transmission data in the data slots of a frame, see col. 17, lines 29-33 and lines 45-53).

Regarding **claim 3**, Kondylis further discloses the method of claim 1, further comprising grouping the beacon frame transmitted by each of the plurality of devices into the superframe as at least one beacon period (signaling period/subframe 902, see

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fig. 9, col. 16, lines 62-62) having a starting point at a beacon period start time (BPST) and followed by a data transmission phase (inherent, since the signal period/subframe of 902 comprises a plurality of reservation slots 906, which have beginning and end time in the frame 900, see fig. 9, col. 16, lines 62-64).

Regarding **claim 4**, Kondylis further discloses the method of claim 1, further comprising prior to a new or a change of an existing reservation of the sender device, the sender device negotiating with a receiver device of the transmission that is planned during the reservation (the transmitting node X, receiving a reservation confirmation from the one-hop neighbors, so that it can broadcast packets to the nodes in the reserved slot, see col. 18, lines 38-46).

Regarding **claim 5** as applied to claim 4, Kondylis further discloses said negotiation comprising: an initiator device (Node X, see col. 17, lines 29-33) of the reservation transmitting a distributed reservation protocol (DRP)-Request message (node X transmitting in a reservation slot of a frame a reservation request, see col. 17, lines 29-33 and lines 45-53) comprising at least one reservation description selected from the group consisting of a starting time, and a duration signaled by means of BPST or TBTT offset, a reservation period (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to reserved by the node X for transmission of data, see col. 17, lines 29-33 and lines 45-53), a bitmap indicating the reserved times, at least one time slot number, a priority, a channel/hopping indicator, and a code sequence; and in response to said DRP-Request, said negotiation further comprises at least one receiver device of the

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reservation (neighbors of the node X receiving the reservation request, see col. 17, lines 29-31) transmitting a distributed reservation protocol (DRP)-Response message that includes an indicator selected from the group consisting of the proposed reservation is accepted, the proposed reservation is rejected (NACK packet, see col. 18, lines 20-37) with an alternative reservation proposal and the proposed reservation is rejected without an alternative proposal.

Regarding **claim 7**, Kondylis further discloses the method of claim 1, further comprising including in the beacon frame of the first device a starting time of the reservation relative to a reference point selected from the group consisting of the TBTT of the first device, the BPST of the beacon period in which the first device is transmitting the beacon frame, the beginning of the superframe, a time period of the superframe, and a time slot of the superframe (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to reserved by the node X for transmission of data, see col. 17, lines 29-33 and lines 45-53).

Regarding **claim 9**, Kondylis further discloses the method of claim 1, further comprising: maintaining by each device of said plurality a table of all planned reservations received or sent by the device (see col. 18, lines 39-46).

Regarding **claim 11** as applied to claim 1, Kondylis further discloses defining said superframe (frame 900, see fig. 9, col. 16, lines 60-63) as comprising a plurality of medium access time slots (data slots 908, see fig. 9, col. 16, lines 62-66); and defining a reservation as a starting time slot of said plurality of medium access time slots and duration as a number of medium access time slots (node X transmitting in a reservation

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slot of a frame a reservation request, the reservation request indicating data slot in the frame to reserved by the node X for transmission of data, indicating that the reservation request indicates the duration of a data slot and the data slot from which the node X starts the transmission, see col. 17, lines 29-33 and lines 45-53).

Regarding **claim 12** as applied to claim 1, Kondylis further discloses: defining said superframe as comprising a plurality of time units (frame 900 comprising signaling subframe 902 and data subframe 904, see fig. 9, col. 16, lines 62-66); and defining a reservation as a starting time in time units and duration as a number of time units (inherent, since node X transmits a reservation request, the reservation request indicating data slot in the frame to reserved by the node X for transmission of data, indicating that the reservation request indicates the duration period of a data slot and the data slot period from which the node X starts the transmission, see col. 17, lines 29-33 and lines 45-53).

Regarding **claim 14** as applied to claim 1, Kondylis further discloses the method of claim 1, further comprising: defining said superframe as comprising a plurality of medium access time slots (data slots 908, see fig. 9, col. 16, lines 62-66); and defining a reservation as at least one element selected from the group consisting of a reservation period (node X transmits a reservation request, the reservation request indicating data slot in the frame to reserved by the node X for transmission of data, indicating that the reservation request indicates the duration period of a data slot and the data slot period from which the node X starts the transmission, see col. 17, lines 29-33 and lines 45-53), a reservation offset, a reservation period offset, a reservation



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duration, a bitmap of at least one medium access time slot and a type of reservation (see fig. 5, col. 7, lines 58-62, col. 8, lines 1-12).

Regarding **claim 15** as applied to claim 1, Kondylis further discloses the method of claim 1, further comprising defining a reservation as one element selected from the group consisting of: a plurality of reservations per superframe and valid for a single superframe, a plurality of reservations per superframe and valid for a plurality of superframes, single reservation per superframe and valid for a single superframe (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to be reserved for the node X for transmission data in the data slots of a frame, see col. 17, lines 29-33 and lines 45-53), and single reservation per superframe and valid for a plurality of superframes.

Regarding **claim 19** as applied to claim 1, Kondylis further discloses the method of claim 1, further comprising including availability information in a beacon frame of a device (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to be reserved for the node X for transmission data in the data slots of a frame, see col. 17, lines 29-33 and lines 45-53).

Regarding **claim 27** as applied to claim 1, Kondylis further discloses wherein the transmitting includes in the beacon frame information of a reservation selected from the group consisting of a starting point and duration, and a bitmap; and the including is optional (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to be reserved for the node X for transmission data in the data slots of a frame, see col. 17, lines 29-33 and lines 45-53)

**(it is noted that the limitation of claim 27 is optional, and therefore the examiner only addresses the transmitting as disclosed in claim 1).**

Regarding **claim 28** as applied to claim 1, Kondylis further discloses respecting the reservation by all devices receiving a beacon frame that includes a reservation (all nodes update their slot classification tables to reflect data slots scheduled for transmission by other nodes, see col. 18, lines 39-46).

Regarding **claim 33** as applied to claim 27, Kondylis further discloses the receiver device of a reservation performing: in case of a Soft Reservation, starting an own transmission if the sender device does not use the reserved time; in case of a Hard Reservation, not accessing the medium if the sender device of the planned transmission does not use the reserved time; and in case of a Beacon Period Reservation, reserving the time for beacon transmission only (node X transmitting in a reservation slot of a frame a reservation request, the reservation request indicating data slot in the frame to be reserved for the node X for transmission data in the data slots of a frame, see col. 17, lines 29-33 and lines 45-53) **(it is noted that the limitation of claim 33 depends on claim 27 which is optional, and therefore the examiner only addresses the transmitting as disclosed in claim 1).**

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ho 7,068,633 discloses enhanced channel access mechanisms for QoS-driven wireless LANs.

Sugaya 20040053621 discloses radio communication system, radio communication apparatus, radio communication method, and computer program.

Gilbert et al 5,297,144 discloses reservation-based polling protocol for a wireless data communications network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OLUMIDE T AJIBADE-AKONAI/

Examiner, Art Unit 2617

/Charles N. Appiah/  
Supervisory Patent Examiner, Art Unit 2617